

Dioxins and Furans

Work Group Co-Chairs:

Anita Wong, Environment Canada

Erin White Newman, U.S. EPA

Dioxin/Furan Challenges

Canada

- 90% reduction *
- by 2000

* All media within Great Lakes Basin

United States

- 75% reduction *
- by 2006

* Aggregate of air releases nationwide and water releases within the Great Lakes Basin

Progress

Canada:

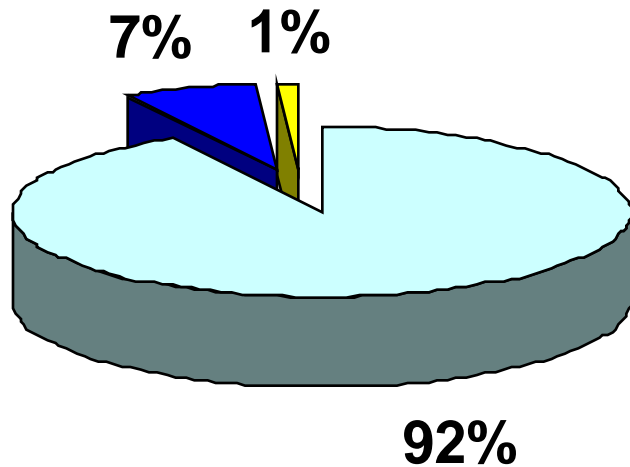
- 83% (213 grams) reduction on total release within GL Basin
- Total release in 2001 = 45 grams

United States

- 77% (10,743 grams) reduction on total release within U.S.
- Total release in 1995 = 3,252 grams

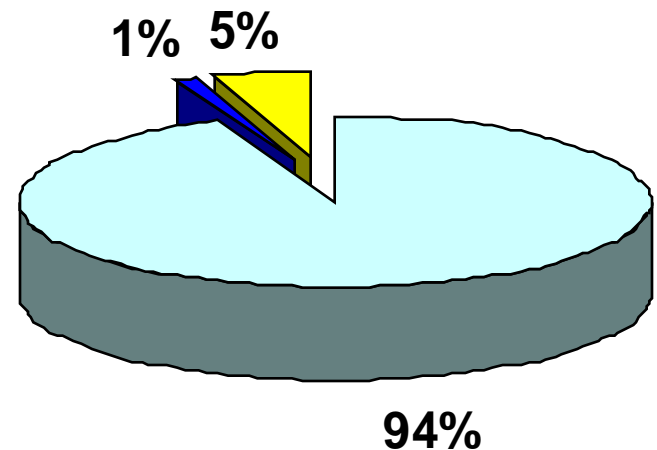
Dioxin Sources by Environmental Media

United States



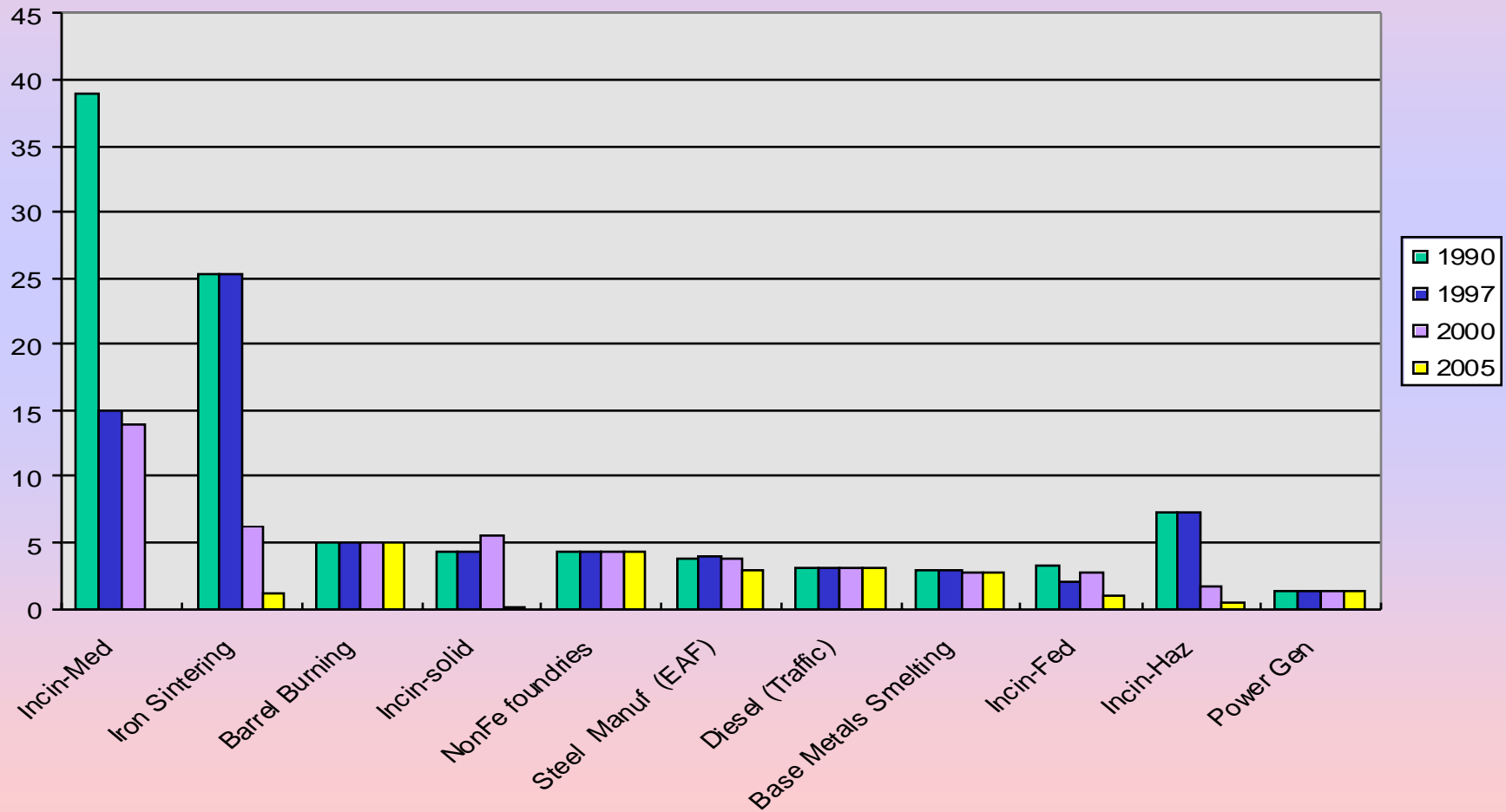
Air
 Water
 Land

Canada

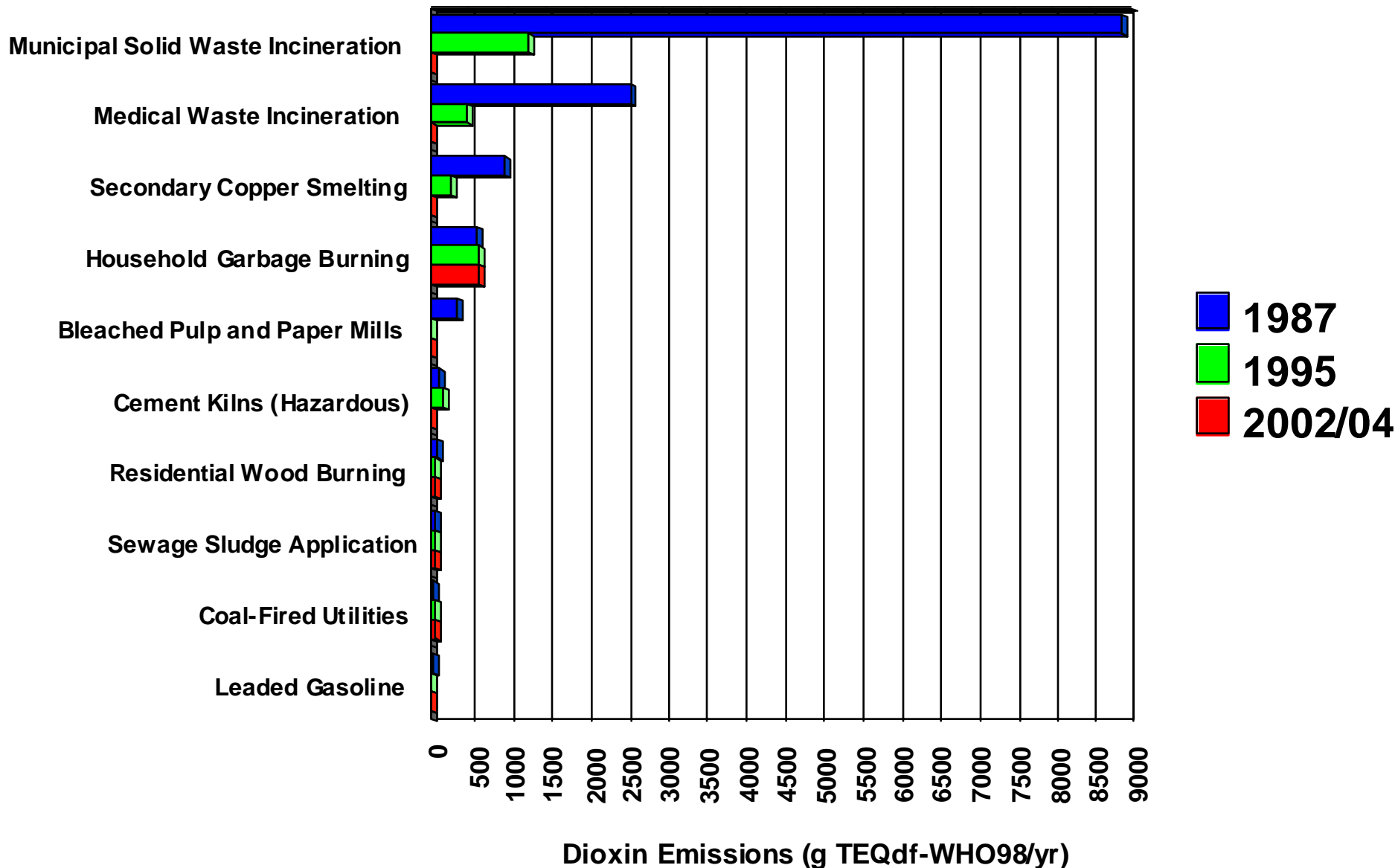


Air
 Water
 Land

Ontario D/F Air Releases and Forecast (grams per year)



U.S. Top Inventoried Dioxin Emissions



4 Steps to Achieve Targets

- 1. Information gathering**
- 2. Analyze current regulations & programs**
- 3. Identify options to achieve further reductions**
- 4. Implement actions**

Workgroup Accomplishments

1998-1999

- ♦ Developed Decision Tree to prioritize issues

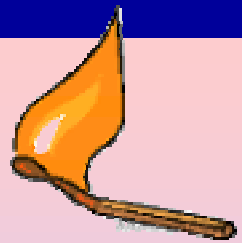
1999-2000

- ♦ Established priority sectors list

2000-2003:

- ♦ Gathered information (USWAG, stack tests, ash management, landfill fires, burn barrel, supported wood stove study, secondary metal smelting)
- ♦ Monitored existing initiatives (MACT implementation, Canada-wide Standards etc.)
- ♦ Developed reduction strategy for one sector (Burn Barrel) through a subgroup, Bruce Gillies - EC lead
- ♦ Supported national initiatives

Poorly Characterized Sources



- Secondary metal smelting
- Coke production
- Ceramic manufacturing
- Clay processing
- Foundries
- Asphalt mixing
- Primary magnesium
- Petroleum refineries
- Boilers
 - ◆ industrial
 - ◆ residential
 - ◆ agricultural
- Residential wood burning
- Crematoria
- Forest fires
- Brush fires
- Range fires
- Agricultural burning
- Landfill Fires
- Structural fires
- Ash Disposal
- Copper wire recycling
- Rural soil erosion
- Urban runoff
- Utility poles and storage yards
- Landfill fugitive emissions
- Transformer storage yards

Upcoming Activities (Today)

- **Burn Barrel Subgroup updates**
- **Present new information gathered (ash management, secondary metal smelting, stack tests results for EAF, base metal smelters, NPRI/TRI, boilers audit)**
- **Review and update priority sectors list**
- **Limited reduction opportunities for workgroup**
- **How to address outstanding sectors (e.g., open burning, boilers, mobile sources)**
- **Consult workgroup on next steps, future role of workgroup**

Possible Next Steps

- **Establish new priority sectors list based on updated dioxin/furan release inventories expected later this year**
- **Compile a Great Lakes Basin d/f release inventory**
- **Seek more reduction opportunities, joint efforts with other substance workgroups**
- **Continue to address information gaps for poorly characterized sources by engaging sectors to share information**
- **Monitor environmental indicators for dioxin/furan, IADN results, other science needs**

Household Garbage Burning

- Includes open burning of garbage on homeowners' property in barrels, woodstoves, open pits, outdoor furnaces, etc.
- See subgroup's website at www.openburning.org for background information, emissions studies, a draft strategy to reduce this behavior, outreach materials, and more.



Household Garbage Burning

Education/Outreach

- ♦ **EcoSuperior, Thunder Bay and Lake Superior watershed, Ontario**
 - **Television, radio, municipal tax bill inserts, website**
- ♦ **Wisconsin DNR, and University of Wisconsin Extension**
 - **New Education Outreach Kit – Air Defenders**
- ♦ **Western Lake Superior Sanitary District**
 - **Completed survey of local U.S. decision makers**
- ♦ **EPA Region 5 continues meeting with states and tribes**
 - **Prioritized grant funding for burn barrel projects**
- ♦ **USEPA Office of Solid Waste**
 - **New national brochure**



Household Garbage Burning

■ Dioxin&Furans Inventory

Household Garbage Burning:

- ♦ New inventory for Ontario - 5 to 10 g ITEQ per year
 - Canadian Council of Ministers of the Environment (CCME)
 - up to two times higher than previous estimate
- ♦ United States barrel burning
 - National estimate - 628 g TEQWHO98 per year

■ Landfill fires:

- ♦ CCME Study estimates 0.5 to 1.5 g ITEQ per year in Ontario

